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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
JOHN F. KENNEDY FEDERAL BUILDING
BOSTON, MASSACHUSETTS 02203-0001

April 20, 200 I

OFFICE OF **THE**
REGIONAL ADMINISTRATOR

Brian Osterndorf, Colonel
District Engineer
New England District
U.S. Army Corps of Engineers
696 Virginia Road
Concord, Massachusetts 01742-2751

Re: Status of the Route 82/85/11 Project

Dear Colonel Osterndorf:

Thank you for helping to arrange our March 30,2001 meeting and site visit to view the Route 11 corridor. I found the visit useful and revealing, and I appreciate the Corps' participation and our productive discussion during that tour. I write now to provide EP A's perspective regarding the practicability of the upgrade alternatives for the Route 82/85/11 project, and to affirm our position on the significance of adverse impacts that would result from a full-build, new alignment roadway.

After a careful review of the information presented in the record, EP A believes that the upgrade alternatives should not be eliminated from consideration during the §404 review process. The information developed to date leads us to believe that one or more types of upgrade alternatives would be practicable and less environmentally damaging. At the very least, we conclude that the applicant has failed to rebut the regulatory presumption that the less environmentally damaging upgrade alternatives meet the basic project purpose and are practicable. Therefore, we do not concur with the Corps' March 9,2001 determination that all of the upgrade alternatives are impracticable. It is unclear whether the Corps based its determination on the ability of upgrades to address existing and future safety and traffic capacity deficiencies in the corridor (i.e., to meet the basic project purpose), or whether upgrades were removed from consideration for other reasons, such as a perceived need to separate through and local traffic, to construct a link in the National Highway Syste~, or to avoid potential social impacts. As explained in more detail in the attachment to this letter, we do not believe any of these issues in this case form the basis for ruling out all upgrade options. In addition, we continue to believe that there should be a complete and thorough evaluation of the various upgrade alternatives. Such an evaluation is important not only because, in our judgment, none of the full-build alternatives is the least environmentally damaging practicable alternative (LEDP A), but also because we believe that construction of any of the full-build alternatives on new alignment would cause or contribute to significant degradation of the aquatic ecosystem and cannot receive a permit. Th~ basis for this belief is also discussed in more detail in the attachment.

The full-build new alignment alternatives would not comply with the §404(b)(1) guidelines for two independent reasons: under 40

C.F.R. §230.10(a), none represents the LEDPA; and, under 40 C.F.R. §230.10(c), each would cause or contribute to significant degradation of the aquatic ecosystem. Hence a §404 permit cannot be issued for any of the full-build new alignment alternatives described in the DEIS or the croaT's Impact Minimization Study report. EP A considers any of these full-build alternatives a strong candidate for action under our CW A
§404(c) authority.

As I mentioned during our March 30dl field visit, I agree with your recommendation that the Corps, EP A, and FWS meet with the croaT and FHW A to discuss remaining alternatives. My staff and I are ready to assist you with this effort to explore whether it is possible to find an environmentally acceptable approach in this case. Please contact me or have your staff call Matt Schweisberg at 617-918-1628 to arrange this meeting or to discuss this letter.

Sincerely,

Ira W. LeIghton,
Acting Regional Administrator

Attachment

CC.

J. Sullivan, croaT
A. Rocque, CffiEP
D. West, FHWA
M. Bartlett, USFWS
C. Godfrey, USACE
J. Goodin, Wetlands Division, EP A
Board of Selectmen, Salem, Montville, East Lyme, Waterford

ATTACHMENT

I. A Full Build Alternative Does Not Com~lv with the &404(b)(1) !!uidelines

The Clean Water Act (CW A) §404(b)(I) guidelines prohibit the discharge of dredged or fill material if there "is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem so long as the alternative does not have other significant adverse environmental consequences." [40 CFR §230.10(a)]. This fundamental requirement of the §404 program is often expressed as the regulatory standard that a permit may only be issued for the "least environmentally damaging practicable alternative" or LEDP A. "Practicable" is defined as "available and capable of being done after taking into consideration cost, existing technology and logistics in light of overall [or, basic] project purposes." [40 CFR §230.3(q)].
For the Route II project, the Corps determined, and we concurred, that the basic project purpose is "to address existing and future year (2020) safety and capacity deficiencies in the existing Route 82 and 85 corridor."1 For "non-water dependent" activities located in wetlands or other special aquatic sites, such as this project, the guidelines presume that practicable alternatives
exist and that such alternatives would be less damaging to the aquatic environment. The burden to demonstrate compliance with the alternatives test and rebut the presumption rests squarely
with the applicant, in this case the Connecticut Department of Transportation (CTDOT).

A. No comprehensive analysis (}f upgrade alternatives has ever been conducted.

From the outset of the §404 review process for this project and up to the present, including in our comments on the Public Notice in May 1999 and on subsequentCTDOT and FHW A reports,
EP A has emphasized the need for a comprehensive anaJysis of two- and four-lane upgrades of the existing road system. For any analysis of upgrades to comply with the requirements of the

I During the §404 review process, croaT has identified a number of goals that would ideally be achieved by the preferred alternative, such as the separation of through and local traffic, the completion of national highway system linkage, and the desire to avoid community impacts and maintain a rural character in the existing road corridor. While these goals have merit, in this case they are not directly relevant to whether a given alternative is practicable under the §404(b)(l) guidelines. For example, the separation of through and local traffic, while perhaps desirable from a transportation standpoint, is not essential to meet the basic project purpose. There are, of course, numerous safe and effective highways throughout the country which carry both through and local traffic. More importantly, as discussed elsewhere in this letter, we believe the record shows that upgrade measures would meet the basic project purpose without a separation of through and local traffic. Likewise, completing a link in the national highway system may be a desirable transportation outcome, but is not part of the basic project purpose in this case. And while it is important to consider potential community impacts from *all* alternatives, in this case, the impacts from the various alternatives, including upgrades, do not exceed the normal range for highway projects of this nature. Furthermore, it should be noted that, according to the DEIS, the alternatives on new alignment and the upgrade alternatives would affect a similar number of residential and commercial structures.

alternatives test under §230.10(a) of the g idelines, it must evaluate the effects of the combination of **all** reasonable improveme ts being **concurrently** incorporated into the design. Specifically, EP A requested that CTDOT d FHW A conduct an evaluation of the various upgrade alternatives, with all the traffic an safety improvement features included (e.g. fully upgraded intersections with turning lanes, .dened roadway shoulders, coordinated/optimized signalization, roadway geometry improve ents, consolidated access points, etc.), as opposed to conducting analyses for individual improv ments, for just a few at a time, or in some cases not at all. We do not see how comprehensive up ade designs can be determined to be impracticable until such designs are actually analyzed. I the absence of such an analysis, we believe croaT has not adequately rebutted the presumpti n that one or more of the upgrade alternatives is practicable.

This is most strikingly illustrated by the £ lure ofCTDOT to incorporate even the most basic design improvements at the intersection at Salem Four Comers (Route 85 and 82). According to FHW A, during the period between 1995 d 1999, there were 28 accidents at this intersectiQn, one of the highest accident rates of any int rsection in the corridor. Also according to FHWA, the vast majority of these accidents were ing related, and occurred on the northbound leg of Route 85 [1]. Thus, installing properly de igned and signalized turning lanes should result in a safety improvement for this intersection. urtherm.ore, on page 10 of the FHW A's *Response to EP A's Questions on the Practicability of t. e Community Sensitive Upgrade and Upgrade!* i *Widening Alternatives,* it states that i

We found that providing two (2) le~turn lanes for the Northbound Route 85 leg of the Route 82/85 intersection wo~d provide an overall Level of Service of "B"

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Even though the .addition of turning l~es, c~nsidered "mino~ geom~tric improvements" by I FHW A, would dIrectly address the basIC p oJect purpose by Improvrng both traffic safety ari(l capacity, this basic improvement was not i cluded in the overall analysis of upgrades, nor were similar features ever applied to other troub e spots in the corridor as part of a comprehensive review of their combined effectiveness. S mply put, a fully upgraded road has never been properly evaluated, much less proven to b impracticable. I

We appreciate the work that CTDOT and HWA have done to date in evaluating the practicability of upgrade options and the r sponses that both transportation agencies have provided to EP A in response to questions e have raised. A few important issues remain unresolved and we recommend they be ad essed in order to ensure that the upgrade alternatives have been adequately studied and so that th EP A and the Corps are able to make a fully informed decision. We highlight four are here: .I

0 CTDOT and FHWA may have

~sed inappropriate design traffic volumes. Due to public comment reflecting a concern that HW A and CTDOT had overestimated traffic volumes
for the Route *2/2A132* project, CTDOTan FHW A recently incorporated new direct traffic count data for that project. FHW A and CT DO have now revised the traffic volume figures and

seasonal adjustment factors, resulting in a significant reduction of traffic projections in the i corridor. Since Route 2 traffic volume estimations and seasonal adjustments were used to : estimate summer conditions for Route 82/85/11, it is possible that summer traffic projectio,s on Route 82/85/11 likewise have been overestimated. This possibility should be investigated.

0 In addition to reevaluating the estimation of traffic volumes and seasonal increases for the Route 82/85/11 corridor, we strongly recommend that continuous traffic counts be conducted in the corridor this summer. Direct measurement would provide a much more accurate picture of the true traffic volume occurring in the corridor, rather than relying on estimates from limited local data or data from other road corridors.

0 Level of Service (LOS) and volwne to capacity ratio (V /C) data are presented only for large portions of the road corridor in question, rather than being broken down into subsegments between key intersections, such as those intersections which have exhibited the greatest safety and capacity deficiencies. A good example of the docwnentation of subsegment traffic data is the Route *2/2A132* DEIS. EP A has requested but never received subsegment LOS and V /C data, which would allow a more focused analysis of the effectiveness of improvements at these locations, and provide a more accurate characterization of traffic flow in the corridor.

0 In the DEIS and in subsequent reports, FHWA and CTDOT have characterized i existing conditions on all of Route 85 (from Route 82 to south of 1-395) as operating at LO~ E (DEIS, Figure 4-13), despite the fact that average travel speeds throughout the corridor are at or above the posted speed limit, even during peak hour traffic (DEIS, Table 4-5). The speed limit data suggest that any delays causing inadequate LOS along Route 85 must be localized, presumably at poorly designed intersections or other trouble spots. This scenario is supported by the accident data, which clearly show the majority of accidents are either turning or rear end accidents occurring at a few intersections in the corridor. EPA has long believed that improving these intersections through the addition of turning lanes, optimized signalization, improved road geometry and other TSM measures could meaningfully address both traffic capacity *and* safety deficiencies in the corridor. However, the effect of this approach remains unclear since a comprehensive evaluation of traffic volume and safety incorporating these types of improvements for all deficient intersections has not been conducted.

B. The existing record contains information which suggests that upgrading Route 85 is practicable.

The portion of Route 85 from 1-395 southward was widened to *four* lanes several years ago. While EPA recognizes that a full *four* lane widening of Route 85 may not be the preferred alternative, the existence of an operational widened segment of Route 85, connected to the segment under consideration for upgrade, provides tangible evidence that it is indeed **practicable** to widen Route 85. Continuation of the upgraded segment is plainly capable of being done from an engineering and cost standpoint, and would meet the basic project purpose, according to the information presented by CTDOT and FHW A in the Draft Environmental Impact Statement

(DEIS).

Specifically, the OEIS states that under the four lane widening alternative, *"roadway segment capacity and safety would increase substantially,"* and that *"volume to capacity ratios would decline to less than 0.40 for all segments of Route* 85 *except south of* 1-395" (section 5 page 9 of the DEIS, emphasis added). This means that a four lane road would operate with traffic volume at less than half of the road's capacity for all of Route 85 above 1-395. We therefore fail to see a basis for concluding that this alternative would not meet the basic project purpose of addressing existing and future traffic safety and capacity deficiencies. A "practicable"

alternative is one which meets the basic project purpose and is feasible in terms of costs, logistics and existing technology [see 40 CFR 230.10(a)]. The agreed upon basic purpose is to "address existing and future safety and capacity deficiencies" and, as noted above, the DEIS states that under a four- lane widening, roadway segment "capacity and safety would increase substantially." As far as costs, logistics and existing technology go, none of these issues would appear to make a four lane widening impracticable. The cost of such an alternative is approximately $33 million,
~ontra.sted t~ ~ ~l build alternati:e~ which would .cost approximately. $255 milli~n,.not Ui mcludmg mItIgatIon costs. And It IS clearly practIcable from a technIcal and logIstIcal standpoint, since a widening was already successfully completed on Route 85! It is therefore inappropriate to remove the four lane widening from consideration as the LEDP A. i

Moreover, EPA believes that a full four lane widening may not be necessary to achieve the basic project purpose, and that a two lane upgrade with improvements including intersection upgl1ades with appropriate turning lanes, enhanced signalization, shoulder widening, and geometric improvements could address traffic capacity and safety deficiencies in the corridor. Such J alternative would presumably involve fewer takings and otherwise be preferable in terms of some of the concerns raised by the communities about improvements to the existing road. In any
event, as we stated earlier, this kind of comprehensive upgrade model has never been fully analyzed, and the presumption that it is a less environmentally damaging, practicable alternative
remains unrebutted.

We also think it may be useful to examine the Route 11 proposal in the context of how similar cases have been handled. For example, the Corps determined that a two lane upgrade is practicable for Route 2 in nearby North Stonington, a project with the same purpose in a similar, but more congested, road corridor. Route 2 from Preston to North Stonington is a facility similar to Route 85, located in and serving the same general area of the state, conveying traffic between Hartford and 1-395, 1-95 and the coast, having a combination of through and local traffic, and experiencing seasonal increases in traffic in the summer. Indeed, Route 2's traffic patterns are so

2In some cases, our offices have agreed that an alternative is impracticable based on logistical grounds because it would entail major community disruption or property takings well beyond the normal range for highway projects. That is not the case here and would not form a legitimate basis for eliminating upgrade options from further consideration.

similar to the Route 82/85/1 1 corridor that CTDOT and FHW A chose to use traffic data from Rou~e 2 to esti,mate se~so~al incre~es of traffic on Route 82/85/11 (although the Route 2
11 corrIdor expenences slgmficantly hIgher traffic volumes). ,

In making its LEDP A determination for the Route *2/2A132* project, the Corps considered several alternatives to achieve the basic .project purpose, described in terms nearly identical to that of the Route 11 project as "to provide a safe and efficient transportation improvement solution to
relieve traffic congestion and improve safety" in the corridor. The build alternatives considered for the Route *2/2A132* project included a bypass of Route 2 on new alignment in North
Stonington and a four lane widening of Route 2 in North Stonington. The Corps determined, however, that a two lane upgrade of this portion of Route 2 was a practicable alternative that would meet the basic project purpose, even though this portion of Route 2 (in fact, all of Route
2) has significantly greater traffic volume than the Route 82/85/11 corridor. In addition, the! LEDPA selected by the Corps included either a two- or four-lane upgrade of the existing! highway for the adjacent section of Route 2 in Preston, CT, deeming it a practicable and effective means to meet the project purpose.

In another example, at Route 6 in Brooklyn, CT, CTDOT is improving an existing road, rather than creating a new highway, as a practicable alternative to address traffic safety and capacity deficiencies. This is another two lane highway similar to Route 85, with traffic capacity and safety deficiencies, the presence of both through and local traffic, and a rural character where concerns about social impacts were taken into consideration in the design process. Although originally promoting construction of a road on new alignment to address safety and capacity issues, CTDOT decided to retain the existing two lane road, adding shoulders (with

reduced I width in sensitive areas), reducing curve radii, and improving site distances. 1.1

EP A believes the approach taken in these cases reflected a relatively comprehensive review pf the record and a selection of a LEDP A based on the criteria established by the §404(b)(1) I guidelines. We also agree that there have been cases, such as the Conway Bypass in New Hampshire, where upgrade alternatives were eliminated legitimately. In contrast, for the Route 82/85/11 project, we believe a careful and objective review of the record developed to date supports a conclusion that one or more upgrade alternatives should be considered practicable and, in any case, does not provide a basis for eliminating them from further consideration.

II. A Full Build Alternative is Too Damal!ing To Receive a Permit

From the earliest stages of project review, EP A expressed concern that the Route 11 project could be too environmentally harmful to receive a permit, a view which has been reinforced as we conducted a more detailed analysis. As first explained in our May 21, 1999, comment letter and technical attachnient (which we incorporate here by reference) on the DEIS and §404 Public Notice, and reiterated several times in the ensuing two years, EP A believes that construction of any of the full-build alternatives on new alignment would cause or contribute to significant

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degradation of the aquatic ecosystem. Over the last two years, my staff visited the corridor several times and examined the literature on the effects of roads on aquatic and terrestrial ecosystems. In addition, the knowledge and expertise gained from our experiences with the Connecticut Route 6 project inform us further on this subject, as the expected adverse impacts from a new Route **11** are similar in type (but in most respects far greater in range an.d severity). We remain confident that our conclusions regarding the significance of the impacts of a full~ build project are correct scientifically and supported by the record.

A. The aquatic resources of the corridor.

Our March 30th visit to the project area provided you and your staff with a firsthand look at the exceptional quality of stream and wetland systems in the new alignment corridor. The extent and mixture of upland ridges separated by stream and wetland valleys, with vernal pools scattered across this landscape, are striking, especially for southeastern Connecticut. Though we did see that a few residential subdivisions and small roads mark this area, they appear to have had
limited effect on the quality of this vast resource and the area remains a remarkable expanse of habitat with mostly high biological integrity.

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The stream and wetland systems within the new alignment corridor are outstanding for their ecological integrity and broad range of functions. These functions stem from the mosaic ofl relatively undisturbed stream, wetland, and upland complexes in and adjacent to the project area. Field work by croaT's consultant documented that the Harris Brook and Willys Brook/Oil Mill Brook wetland complexes provide 12 of the 13 functions and values listed in the Corps Highway Methodology-Descriptive Approach. They documented all 13 for the Latimer Brook complex. Principal functions and values exhibited by these wetland systems include wildlife habitat; groundwater recharge/discharge; sediment/toxicant detention; production export; and fish habitat. In short, the area offers some of the finest fish and wildlife habitat remaining in southern New England.

For the record, we note an important issue with respect to vernal pools and amphibian/reptile resources. Our field visits to the project area revealed what appears to be an abundance of vernal and other temporary pools that likely serve as key habitat for a variety of amphibian and reptilian species. During five or six field visits to the corridor over the last two years, EP A staff noted
four species of stream and mole salamanders, as well as potential high quality habitat for several species of turtle. We believe it essential that the corridor undergo a comprehensive field survey to identify vernal and other temporary pools, and to carefully explore this area for rare ampl11ibian and reptilian species. Due to the undisturbed nature of the corridor and the mosaic and complexity of aquatic and terrestrial systems, there is a reasonable chance that rare or uncommon amphibian and reptilian species could be found.

B. Adverse environmental impacts.

CTDOT's preferred full-build alignment, known as alternative E4m, consists of a limited-access,

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four-lane arterial roadway. As described in the CTDOT's Impact Minimization Study, this roadway would be roughly 1 DO-feet wide, including clearing, and the barrels would be separated by a Jersey barrier--a solid, continuous concrete divider, The Study mentioned that this alternative would result in direct (footprint) fill of approximately 7 acres of wetlands. However, subsequent discussions with CTDOT and the towns revealed that additional modifications would be necessary, particularly at the interchanges with Route 161 and 1-95, and that direct filling would likely rise to between 10 and 12 acres of wetlands. While these direct losses of high quality resources are troubling, we are even more concerned about the array of indirect and secondary adverse impacts that would result if this highway were constructed as proposed.

The CTDOT's 1999 DEIS contained a description of the general types of direct and indirect adverse environmental impacts caused by constructing new highways. These impacts include:

0 Land clearing, roadway cuts, and road base fill, which remove all vegetation within the right-of-way and dramatically alter the topography and surface hydrology of the land; I

0 Stream and river culverting at crossings and vegetation clearing around crossings, which cause loss of stream-side and -bottom habitat, sedimentation of waterways, increased water temperatures, and lowered water quality;

0 Erosion of cut slopes and unstabilized **fill,** which causes sedimentation of adjacent water bodies and wetlands that smothers plants and sedentary animal species, degrades water quality, and renders habitat less suitable for fish and wildlife; and,

0 Placement of long, wide pernlanent features through an undisturbed landscape, which separates forest blocks and fragments wildlife habitat, degrading adjacent areas and rendering remaining habitat less valuable.

A more thorough explanation of the ways in which roads affect terrestrial and aquatic ecosystems is presented by Trombulak and Frissell (2000)[2]. They review seven general effects: f I 1

I. increased mortality from road construction;
2. increased mortality from collision with vehicles;
3. modification of animal behavior;
4. alteration of physical environment;
5. alteration of chemical environment;
6. spread of exotic species; and,
7. increased alteration and use of habitats by humans.

As the authors recognized, these general effects overlap somewhat. However, we believe these categories provide a useful framework for assessing the ecological effects of roads, which w~ summarize briefly below. f I I

In their study along Route 2 through several towns west of Boston, Forman and Deblinger (2000)[3] found that fragmentation and other indirect adverse effects of roads create an average "road-effect zone" of 600 meters (approximately 1,800 feet) in width and that this zone is asymmetrical (in some instances, it may reach outwards to 1 kilometer (approximately 3,200 feet)). Furthermore,

Trombulak and Frissell (2000) also found that in a diverse landscape like the one that exists in the Route 11 corridor, roads produce a pattern of aquatic habitat loss that differs from the terrestrial pattern and can be more insidious. They coin the term , "hyperfragmentation" to describe the multidimensional view of ecological fragmentation and habitat loss that emerges when the consequences of roads on terrestrial and aquatic ecosystems are considered simultaneously. Trombulak and Frissell conclude that "[e]ven where only a small percentage of the land's surface is directly occupied by roads, few comers of the landscape remain untouched by their off-site ecological effects." They emphasize that the larger and wider the road corridor, and more heavily traveled the road, the greater the adverse effects of hyperfragmentation as well as the other adverse impacts of roads. Among others, these effects include the introduction and rapid spread of invasive plant species, an impact of extreme concern in the project corridor.

Road crossings of streams and adjacent wetlands directly change the hydrology of slopes and stream channels, resulting in altered habitats that-are often detrimental to native plant and animal communities. Roads intercept shallow ground water flow, changing its pathways and diverting that water along the roadway, routing it efficiently to discharge points at stream crossings (Me gahan, 1972[4]; Wemple *et al.*, 1996[5]). This change can lead to changes in the timing, and routing of runoff, an effect more pronounced and damaging in smaller, higher quality stream systems (Jones and Grant, 1996)[6]. Changes in the routing of shallow ground water and sUrface flow can lead to unusually high concentrations of runoff on steep hillslopes that in turn can cause erosion through gully creation, channel head initiation, or slumping of slopes and debris flows (Me gahan, 1972; Wemple *et al.*, 1996). Along the E4m alignment, there would be 14 crossings of perennial and intermittent streams, many of which occur in steep hillslopes. Once begun, these processes are difficult to control and their adverse effects upon stream and wetland biqta can be felt far downstream of the occurrence. 1 i.

There are several types of wildlife (small mammals, most amphibians and reptiles) for which ~ major highway represents an insurmountable obstacle, either because a) they will not attempt to cross it; b) they cannot physically reach the surface of the roadway to cross it (e.g., salamanders); c) once reaching the roadway surface they are too slow to traverse it successfully (e.g., most turtles, many snakes); or d) they cannot get through or around a roadway divider, such as a Jersey barrier. Moreover, many of these wetland dependent species use upland corridors for traversing the landscape, so the proposal by CTDOT for spanning streams and wetlands does little to mitigate this adverse effect. In addition, for these less mobile species, CTDOT's proposal t+ steepen sideslopes along certain portions of the roadway to reduce the footprint of the fill' actually exacerbates the problem. For the few individuals of these smaller wildlife guilds that successfully navigate one barrel of the road, a Jersey barrier leaves them stranded in the middle. Finally, existing literature, particularly Jackson and Griffin (1998)[7], stresses the difficulty and

expense of designing roads with features that only ~ alleviate ~ of the adverse effects upon movement of a variety of wildlife species.

The environmentally damaging nature of the proposed project (a limited access highway cutting a swath across the landscape) and its location in an environmentally valuable area would I combine to cause significant adverse impacts to the aquatic environment. As we have ! summarized in this letter and described in greater detail in our comments on the DEIS, a full! build proposal would cause direct, indirect and secondary adverse impacts to the aquatic I environment. That it may be difficult to be precise in a quantitative way about certain of the impacts, does not make them any less real or less likely to occur. For example, while we can state with certainty that construction of a highway across this unspoiled landscape will cause a decline in sensitive species (e.g., salamanders, forest interior birds), we cannot predict exact~y when a particular population will be extirpated from the area.

The landscape through which a new Route **11** would be constructed is among the 1east disturbed, leaSt fragmented and most valuable habitat in Connecticut. It contains a mosaic of high quality stream and wetland ecosystems interspersed among large habitat blocks that offer important ecological functions. Building a major highway in this location would have profound and deleterious impacts to the resources that §404 is intended to safeguard. **In** our view these I impacts would lie significant within the meaning of the §404(b)(1) guidelines.3

C. **Mitigation**

A project that would result in significant degradation may be able to achieve compliance with §230.1 O(c j if compensatory mitigation can offset the impacts sufficiently such that they wo~ld no longer be significant. In this case, the high quality of the resources involved, the magnitude of the impacts and difficulty associated with mitigating for indirect effects, CTDOT faces a daunting task. We doubt whether it is even possible to develop a mitigation package for a new build alignment which would bring the impacts of the road below the significance threshold. In any event, no comprehensive mitigation plan has been proposed. I

We are aware that some project proponents favor including a 3000 acre "greenway" with a limited access four lane, arterial highway. CTDOT has yet to embrace this idea officially. As we understand it, this combined approach is intended to reduce the direct impacts of a new road as compared to the originally proposed expressway, and to address habitat fragmentation and

3 In a similar case, Connecticut Route 6, the Corps and EP A have determined that]'.iicf significant adverse impacts would occur from the State's current proposal. The Route 11 I pro~osal in. our judgment would cause great~r enviro~e~tal h~ than the Connecti~ut Rotte 6 project, a View also expressed by the u.S. Fish and WIldlIfe ServIce and the ConnectIcut i Department of En~ironmental Protection. I

other indirect impacts and potential future secondary impacts by preserving identified areas (!)f valuable habitat. While we agree a greenway would have certain environmental benefits, we do not believe it would prevent alternative E4m from causing or contributing to significant impacts. A greenway may help reduce the potential for secondary impacts stemming from future projects. However, it would not offset the direct impacts in any manner, and would do little or nothing to prevent or offset the indirect impacts that would be caused by the road. These indirect impacts include the separation of forest blocks and fragme.ntation of wildlife habitat, the imposition (!)f a barrier to wildlife movement, the establishment of a vector for invasive species, the alteration of surface and groundwater flow patterns, and the adverse impact on water quality and fish and wildlife habitat in streams, caused by flow and temperature alteration, culverting, and sedimentation and pollutant loading from erosion and runoff during construction and operation of the road. It is also important to bear in mind that the value of the resources protected under a greenway proposal will be diminished due to the proximity of a major highway facility.

In addition, it is not clear that the greenway proposal would ever in reality be what has been conceived by the local interests. Among other concerns, the CTDOT has not officially endorsed and adopted the towns' greenway proposal; the use of state funds to implement the greenway effort is prohibited by the enabling state legislation; no other source of sufficient funding has been identified to date; the towns that comprise the greenway commission set up by the state legislation have stated publicly that they do not intend to take land from unwilling sellers (even if the commission has eminent domain powers, which itself is unclear); and, no actual plan, surveys, maps, etc., have been produced to identify and evaluate targeted parcels, determine ownership status, rank targeted parcels for acquisition, etc. Other than setting up the framework fora greenway commission, little progress has been made in advancing this concept during the approximately two years that the towns have promoted it. Despite the good intentions of towns, EP A doubts strongly the likelihood of achieving the ultimate goal of the greenway in a time frame suitable for its intended purpose, i.e., as adequate mitigation for the new road. Ii..

III. Conclusions

EP A believes that the Route 11 project, as currently proposed, would cause significant and, in a all likelihood, avoidable adverse impacts to the aquatic environment. Therefore, it cannot qualify for a §404 permit. In addition, EP A believes that the applicant has not yet fully evaluated all upgrade alternatives, and has failed to rebut the regulatory presumption that the less environmentally damaging upgrade alternatives are practicable. To summarize, EPA finds that:

Alternatives

.:. a four lane upgrade is in fact practicable and would meet the basic project purpose;

.:. comprehensive analyses of two- or four-lane upgrades including the

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concurrent incorporation of design improvements throughout the corridor (and especially at high congestion, high accident rate intersections) have not been conducted, therefore the presumption that such upgrades are practicable alternatives remains intact; and,

.:. the Corps has found two- and four-lane upgrades practicable and effective in addressing traffic safety and capacity deficiencies in analogous situations - comparable facilities with a similar basic project purposes, yet which exhibit higher traffic volumes, and for which bypass alternatives were rejected.

Significance Qflmpacts

The extensive direct, indirect and secondary adverse effects of constructing any of the full-build alignments would cause lasting and severe environmental damage to the wealth of ecological functions currently provided by the existing stream and wetland systems. The capacity of t1i1e landscape to support the existing variety and numbers of fish and wildlife species would be irreparably reduced. Based on the information available to date, EP A believes that these adverse impacts would cause or contribute to significant degradation of the aquatic ecosystem, a violation of 40 C.F .R. 230.1 O(c) of the §404(b)(1) guidelines, and that none o(the full-build altematires
on new alignment could receive a §404 permit. I

The full-build new alignment alternatives would not comply with the §404(b)(1) guidelines for two independent reasons: under 40 C.F.R. §230.10(a), none represents the least environmentally damaging practicable alternative; and, under 40 C.F .R. §230.1 O(c), each would cause or contribute to significant degradation of the aquatic ecosystem. Hence a §404 permit cannotlbe issued for any of the full-build new alignment alternatives described in the DEIS or the ' CTDOT's Impact Minimization Study report. EPA considers any of these full-build alte~tives to be a strong candidate for action under our CW A §404(c) authority. I I I

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TECHNICAL REFERENCES

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